

Appl. No. 10/723,007
Restriction Resp. dated May 13, 2005
Reply to Office Action of April 29, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (original) A light controller for use in a vehicle, the light controller comprising:
a portable device having a communication function;
a lighting device arranged in the vehicle and having a vehicle entering mode with changeable lighting patterns and a vehicle exiting mode;
a first controller connected to the lighting device for communicating with the portable device, the first controller illuminating the lighting device in the vehicle entering mode when communication with the portable device is established and changing the lighting pattern of the lighting device in the vehicle entering mode when a first condition is satisfied; and
a second controller connected to the lighting device for communicating with the portable device, the second controller illuminating the lighting device in the vehicle exiting mode when communication with the portable device is established and a second condition is satisfied.
2. (original) The light controller according to claim 1, wherein the lighting device has a warning mode, the light controller further comprising:
a third controller connected to the lighting device for communicating with the portable device, the third controller illuminating the lighting device in the warning mode when communication with the portable device is not established and an unauthorized action is taken against the vehicle.
3. (original) The light controller according to claim 1, wherein the lighting pattern of the lighting device that is changed in the vehicle entering mode is at least one of an emitted light color pattern, a flashing time pattern, and a brightness pattern.
4. (original) The light controller according to claim 2, wherein the vehicle includes a warning device for issuing a warning when an unauthorized action is performed against the

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vehicle, and the third controller flashes the lighting device in red during the warning mode, the light controller further comprising:

a fourth controller connected to the warning device to control the warning device.

5. (original) The light controller according to claim 1, wherein the second controller flashes the lighting device at intervals that is gradually increased during the vehicle exiting mode and stops illuminating the lighting device when communication is no longer established with the portable device.

6. (original) The light controller according to claim 1, wherein the lighting pattern is changeable in the vehicle exiting mode, and the first and second controllers lock and unlock a door of the vehicle when changing the lighting pattern of the lighting device in the vehicle entering mode or the vehicle exiting mode.

7. (original) The light controller according to claim 1, further comprising:

a calculator connected to the first and second controller, wherein the calculator generates a calculation signal by calculating the distance between the vehicle and the portable device based on signal intensity of a communication signal transmitted from the portable device;

the first controller changing the lighting pattern of the lighting device during the vehicle entering mode in accordance with the calculation signal; and

the second controller changing the lighting pattern of the lighting device during the vehicle exiting mode in accordance with the calculation signal.

8. (original) The light controller according to claim 1, wherein the vehicle includes a door, and a manipulated device arranged in the door and manipulated to open and close the door, the lighting device including a door light arranged on the manipulated device to illuminate a surface of the door.

9. (original) The light controller according to claim 1, wherein the vehicle includes a door, and a manipulated device arranged in the door and manipulated to open and close the door,

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the lighting device including a footlight arranged on the manipulated device to illuminate the ground near the door.

10. (original) The light controller according to claim 9, wherein the footlight includes a lens focused towards the ground.

11. (original) The light controller according to claim 1, wherein the vehicle includes a door, and a manipulated device arranged in the door and manipulated to open and close the door, the lighting device including a door light arranged on the manipulated device to illuminate a surface of the door, and a footlight arranged on the manipulated device to illuminate the ground near the door.

12. (original) The light controller according to claim 11, wherein at least one of the door light and the footlight is a light-emitting diode.

13. (original) The light controller according to claim 11, wherein at least one of the door light and the footlight is a multicolor light-emitting body.

14. (withdrawn) A method for controlling the lighting of a lighting device arranged in a vehicle, the method comprising:

establishing communication between a portable device, which has a communication function and which is carried by a driver, and a transceiver, which is arranged in the vehicle;

calculating the distance between the vehicle and the portable device;

flashing the lighting device when the calculated distance enters a first range as the driver approaches the vehicle; and

changing a lighting pattern of the lighting device when the calculated distance enters a second range that is smaller than the first range.

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15. (withdrawn) The method according to claim 14, wherein said changing a lighting pattern includes changing at least one of an emitted light color pattern, a flashing time pattern, and a brightness pattern.

16. (withdrawn) The method according to claim 14, wherein said calculating the distance includes calculating the distance based on a signal intensity of a communication signal transmitted from the portable device.

17. (withdrawn) The method according to claim 14, wherein the lighting device includes at least one of a headlight, a taillight, a passenger compartment light, a door light arranged in a door of the vehicle, and a footlight arranged in the door of the vehicle.

18. (withdrawn) The method according to claim 14, further comprising:
unlocking a door of the vehicle when the calculated distance is in the second range.

19. (withdrawn) The method according to claim 14, wherein the lighting device has a warning mode, the method further comprising:

illuminating the lighting device in the warning mode if an unauthorized action is taken against the vehicle when communication is not established between the portable device and the transceiver.

20. (withdrawn) The method according to claim 14, further comprising:
flashing the lighting device when the calculated distance is in the second range as the driver gets out of the vehicle; and
locking a door of the vehicle and changing the lighting pattern of the lighting device as the driver moves to the first range from the second range.